

PCT

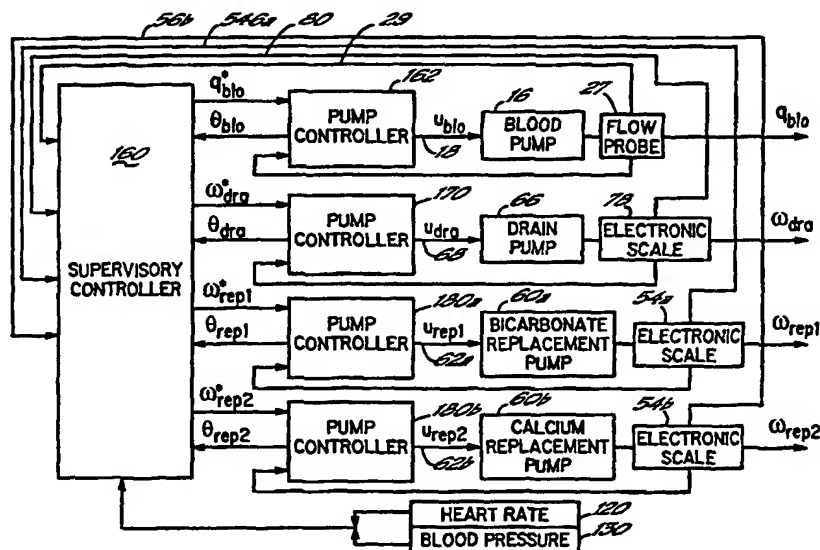
WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 : A61M 1/16, 1/34		A1	(11) International Publication Number: WO 00/66197
			(43) International Publication Date: 9 November 2000 (09.11.00)
(21) International Application Number: PCT/US00/11620		(81) Designated States: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).	
(22) International Filing Date: 28 April 2000 (28.04.00)			
(30) Priority Data: 60/131,955 30 April 1999 (30.04.99) US			
(71) Applicant (for all designated States except US): CHILDREN'S HOSPITAL MEDICAL CENTER [US/US]; 3333 Burnet Avenue, Cincinnati, OH 45229-3039 (US).			
(72) Inventors; and (75) Inventors/Applicants (for US only): <u>BISSLER</u> , John, J. [US/US]; 5450 Bayberry Drive, Cincinnati, OH 45242 (US). <u>POLYCARPOU</u> , Marios [CY/US]; 8617 Denallen Drive, Cincinnati, OH 45255 (US). <u>HEMASILPIN</u> , Nat [US/US]; 756 Crowden Drive, Finneytown, OH 45224 (US). <u>MORALES</u> , Efrain, O. [US/US]; 196 Charwood Circle, Rochester, NY 14609 (US).		Published With international search report.	
(74) Agents: AHRENS, Gregory, F. et al.; Wood, Herron & Evans, L.L.P., 2700 Carew Tower, Cincinnati, OH 45202 (US).			

(54) Title: HEMOFILTRATION SYSTEM



(57) Abstract

A multipurpose hemofiltration system (10) and method are disclosed for the removal of fluid and/or soluble waste from the blood of a patient. The system (10) continuously monitors the flow rates of drained fluid, blood, and infusate. When necessary, the pumping rates of the infusate, drained fluid and blood are adjusted to remove a preselected amount of fluid from the blood in a preselected time period. A supervisory controller (160) can monitor patient parameters, such as heart rate (120) and blood pressure (130), and adjust the pumping rates accordingly. The supervisory controller (160) uses fuzzy logic to make expert decisions, based upon a set of supervisory rules, to control each pumping rate to achieve a desired flow rate and to respond to fault conditions. An adaptive controller (162) corrects temporal variations in the flow rate based upon an adaptive law and a control law.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						